**Chemical Sciences 2**

**Expert Group Member 3:**

**Explain what occurs when a candle burns. It is not easy to ‘see’ what is occurring. How can you demonstrate the reaction that is occurring? Use this understanding of burning to explain how cars pollute the air.**

When a candle burns it uses the wax surrounding the wick as fuel. It also needs oxygen to burn. The flame melts the wax and it is then absorbed into the wick to be used as fuel and vaporises. Solid- liquid- gas transition. Burning a candle forms water vapour, particle matter and carbon dioxide. The water vapour is harmless but particle matter and carbon monoxide are air pollutants. The gas transition cannot easily be seen unless a jar is placed over the burning candle.

By understanding what occurs when a candle burns allows you to apply the same knowledge to air pollution caused by cars. Just like a burning candle air pollution from cars is not easily seen. The burning process is a lot more complex than the candle as gasoline and diesel fuels produce many different kinds of gases, vapors and particles. Nitrogen oxides and sulfur oxides are formed and these are two major air pollutants. Just like a candle a car burns a fuel and causes a chemical change resulting in new substances that pollute the air.

Information gathered from:

<http://www.deakin.edu.au/arts-ed/education/sci-enviro-ed/early-years/pdfs/chem-change.pdf>

<http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=13&ved=0CF8QFjACOAo&url=http%3A%2F%2Fairqualityeffects.uckac.edu%2FUP_IN_SMOKE.doc&ei=D_UDULLqD8GuiQeCytX4Bw&usg=AFQjCNFUUooEq1IGQGOvxJpCGo_FreMaLw>